

**Monteiro, Giselle A.; Tvrdý, Milan**

**Generalized linear differential equations in a Banach space: continuous dependence on a parameter.** (English) [Zbl 1268.45009](#)

Discrete Contin. Dyn. Syst. 33, No. 1, 283-303 (2013).

This paper is concerned with the solution of generalised linear differential equations of the form

$$x(t) = \tilde{x} + \int_a^t d[A]x + f(t) - f(a), \quad t \in [a, b],$$

in a Banach space  $X$ . The overall aim is to provide results on the continuous dependence of the solutions on a parameter.

Following preliminaries, in which existing results are reviewed, the main part of the paper presents a sequence of results covering existence, uniqueness, and various technical results on representations of solutions. Section 5 of the paper illustrates how the methods can be applied to deal with linear equations on time scales and among the closing remarks are some suggestions about applications to linear functional differential equations with impulses.

Reviewer: [Neville Ford \(Chester\)](#)

**MSC:**

- [45N05](#) Abstract integral equations, integral equations in abstract spaces
- [45A05](#) Linear integral equations
- [45D05](#) Volterra integral equations
- [34N05](#) Dynamic equations on time scales or measure chains
- [34K45](#) Functional-differential equations with impulses
- [34K06](#) Linear functional-differential equations

Cited in **2** Reviews  
Cited in **12** Documents

**Keywords:**

dependence of solution on parameter values; generalized differential equations in Banach space; time scale dynamics; Kurzweil-Stieljes integral; linear functional differential equations with impulses

**Full Text:** [DOI](#)